

rain area and the storm advanced to New England, and on the 29th it had dissipated.

XIV.—On the 30th and 31st a feeble low formed on the west Gulf Coast, but it caused considerable rain in Texas and Louisiana on the 30th, and also in the Gulf States generally during the 31st.

XV.—On the morning of the 31st a low was formed over the Lakes, at the northern end of the trough, corresponding to which XIV was at the southern extremity. In the evening a well-marked low was central over New Jersey; this may have been a new configuration resulting from the collapse of the trough, which rapidly filled during the day. The rain area was very general east of the Mississippi River during the 31st.

#### LOCAL STORMS.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

There was a notable absence of local storms and destructive winds over the greater portion of the United States. Not since 1886 have so few storms, either general or local, been reported. The record is as follows:

On the 10th a heavy southwest wind prevailed over Lake Michigan, injuring cargoes and wrecking 2 or 3 schooners.

Heavy rains and dangerous gales occurred on the night of the 13th throughout southeastern New England. At Boston, 3.22 inches of rain was reported and shipping in the harbor was injured, but no serious disaster resulted. At Providence, R. I., a large unfinished school building was wrecked. At Portsmouth, N. H., the storm was severe; cellars were flooded and electric wires torn down.

#### TEMPERATURE OF THE AIR.

[In degrees Fahrenheit.]

The mean temperature is given for each station in Table II, for voluntary observers. Both the mean temperatures and the departures from the normal are given in Table I for the regular stations of the Weather Bureau.

The *monthly mean temperature* published in Table I, for the regular stations of the Weather Bureau, is the simple mean of all the daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to Table II.

The *regular diurnal period* in temperature is shown by the hourly means given in Table IV for 29 stations selected out of 82 that maintain continuous thermograph records.

The *distribution* of the monthly mean temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart II; the lines are drawn over the high irregular surface of the Rocky Mountain Plateau, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

The highest mean temperatures were: Key West, 78.6; Yuma, 75.5; Jupiter, 75.8. The lowest mean temperatures were: In Canada—White River, 30.0; Minnedosa, 33.7; and Qu'Appelle, 33.8. In the United States—St. Vincent, 39.0; Sault Ste. Marie, 39.6; and Northfield, 39.2.

As compared with the normal for October, the mean temperature for the current month was deficient everywhere east of the Rocky Mountains, but in excess over the Plateau Region.

The greatest excesses were: Red Bluff, 4.0; Calgary and Spokane, 3.2; Salt Lake City, 3.1; Baker City, Sacramento, and Yuma, 3.0. The greatest deficits were: Detroit, 6.9; Erie, 6.5; Louisville, 6.2; Sandusky and Toledo, 6.1.

Considered by districts, the current departures from normal temperatures are as given in Table 1. The greatest positive departures were: Middle Plateau, 2.0; northern Plateau, 2.5. The greatest negative departures were: Lower Lake, 5.7; Ohio Valley and Tennessee, 5.1; Abilene (southern Slope), 4.6.

The years of highest and lowest mean temperatures for October are shown in Table I of the REVIEW for October, 1894. The mean temperature for the current month was not the highest on record at any regular station of the Weather Bureau. It was the lowest on record at Port Huron, 44.0; Detroit, 45.4; Erie, 45.8; Cleveland, 46.7; Sandusky, 47.2; Springfield, Ill., 49.5; Toledo, 46.2; Chicago, 46.2; Green Bay, 42.4; Davenport, 47.4; Des Moines, 48.2; Columbus, 48.2; Cincinnati, 51.2; Indianapolis, 49.4; Louisville, 53.1; Kansas City, 53.2; Springfield, Mo., 53.0; Fort Smith, 56.8; Little Rock, 58.6; Abilene, 60.6; Louisville, 53.1; Lynchburg, 53.5.

The *maximum and minimum temperatures* of the current month are given in Table I. The highest maxima were: 99, Yuma (2d); 95, Fresno (1st); 94, Red Bluff (14th). The lowest maxima were: 65, Block Island (8th), Pysht (18th), Port Angeles (20th); 66, Nantucket (frequently), Wood's Hole (3d), Alpena (2d). The highest minima were: 70, Key West (22d); 64, Jupiter (23d); 63, Port Eads (frequently). The lowest minima were: —3, Williston (29th); —2, Bismarck (29th); 3, Moorhead and Huron (29th); 4, Pierre (29th).

The *years of highest maximum and lowest minimum temperatures* are given in the last four columns of Table I of the current REVIEW. During the present month the maximum temperatures were the highest on record at: Columbia, 92; Corpus Christi, 90; Astoria, 76; Fort Canby, 83; Tatoosh Island, 72; Port Angeles, 65. The minimum temperatures were the lowest on record at: Sault Ste. Marie, 18; Port Huron, 19; Erie, 23; Indianapolis, 22; Columbus, 20; Parkersburg, 20; Lexington, 23; Louisville, 26; Keokuk, 20; Kansas City, 26; Wichita, 29; Concordia, 20; Pueblo, 19; Lander, 10; Rapid City, 10; Pierre, 4; Huron and Moorhead, 3; Bismarck, —2; Williston, —3; Portland, Oreg., 31; Carson City, 20.

The *greatest daily range of temperature and the extreme monthly ranges* are given for each of the regular Weather Bureau stations in Table 1, which also gives data from which may be computed the extreme monthly ranges for each station. The largest values of the greatest daily ranges were: Huron, 55; Bismarck, 54; Havre, 52; Rapid City, North Platte, and Columbia, Mo., 50. The smallest values were: Key West, 13; Jupiter, 15; Galveston and Port Eads, 17; Hatteras and Nantucket, 18. Among the extreme monthly ranges the largest values were: Bismarck, 86; Williston and Pierre, 83; Huron and Moorhead, 78; Rapid City, 75; St. Vincent, 70. The smallest values were: Key West, 17; Port Eads, 19; Jupiter, 21; Titusville, 28; Tampa, Hatteras, Block Island, and Nantucket, 29.

The *accumulated monthly departures* from normal temperatures from January 1 to the end of the current month are given in the second column of the following table, and the average departures are given in the third column, for comparison with the departures of current conditions of vegetation from the normal conditions.

Districts.	Accumulated departures.		Districts.	Accumulated departures.	
	Total.	Average.		Total.	Average.
New England .....	+ 0.1	0.0	Middle Atlantic .....	— 9.7	— 1.0
Upper Lake .....	+ 0.5	0.0	South Atlantic .....	— 16.2	— 1.6
North Dakota .....	+ 5.0	+ 0.5	Florida Peninsula .....	— 18.8	— 1.4
Missouri Valley .....	+ 3.1	+ 0.3	East Gulf .....	— 17.4	— 1.7
Northern Plateau .....	+ 3.5	+ 0.4	West Gulf .....	— 17.5	— 1.8
			Ohio Valley and Tenn. ....	— 13.1	— 1.3
			Lower Lake .....	— 7.2	— 0.7
			Upper Mississippi .....	— 0.9	— 0.1
			Northern Slope .....	— 9.8	— 1.0
			Middle Slope .....	— 4.6	— 0.5
			Abilene (southern Slope) ..	— 18.3	— 1.8
			Southern Plateau .....	— 6.3	— 0.6
			Middle Plateau .....	— 10.1	— 1.0
			North Pacific .....	— 2.2	— 0.2
			Middle Pacific .....	— 6.0	— 0.6
			South Pacific .....	— 7.9	— 0.8